UNITED STATES
v.
DAVY LEE WATERS ET AL.

IBLA 93-359 Decided October 30, 1998

Appeal from a decision of Administrative Law Judge Harvey C. Sweitzer declaring the Garden Spot Association Placer Mining Claim (OR MC 88146) null and void for lack of discovery of a valuable mineral deposit.

Affirmed as modified.

1. Mining Claims: Contests--Mining Claims: Determination of Validity--Mining Claims: Discovery: Generally

   The right to obtain patent to a mining claim requires exposure of a valuable mineral deposit within the boundaries of the claim at the time the certificate of entry is issued in response to the patent application. Exposure of a valuable mineral deposit is properly distinguished from the taking of samples to verify the value of the deposit.

2. Mining Claims: Contests--Mining Claims: Determination of Validity--Mining Claims: Discovery: Generally

   A placer mining claimant who fails to insist upon sampling of valuable portions of the placer deposit exposed on the claim assumes the risk that the Government mineral examiner will be unable to verify the alleged discovery of a valuable mineral deposit. Failure of the Government mineral examiner to sample relevant exposures of the placer deposit found on the claim, however, will not preclude the claimant from presenting evidence of the value of the deposit at a hearing in a mining claim contest.

3. Mining Claims: Contests--Mining Claims: Determination of Validity--Mining Claims: Discovery: Generally

   There has been a discovery where minerals have been found in sufficient quantity and quality that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine. The

prudent man principle is supplemented by the marketability rule which mandates that evidence of the costs and profits of mining the claim should be considered in determining whether a person of ordinary prudence would be justified in the further investment of his labor and capital.

4. Mining Claims: Contests--Mining Claims: Determination of Validity--Mining Claims: Discovery: Generally

In applying the prudent man rule in a case in which claimants contemplate a small mining operation conducted by the claimants themselves, the value of claimants' labor is properly considered in determining whether a prudent man would be justified in the further expenditure of his labor and means with a reasonable prospect of developing a paying mine.

APPEARANCES: Marianne Werner King, Esq., Office of the Solicitor, Portland, Oregon, for contestant; Louis F. Schultz, Jr., Esq., and James R. Dole, Esq., Grants Pass, Oregon, for appellants/contestees; Stanley Dempsey, Esq., Denver, Colorado, co-counsel for appellants/contestees.

OPINION BY ADMINISTRATIVE JUDGE GRANT

Davy Lee Waters and Sannaraha Waters (hereinafter cited as appellants, claimants, or contestees), appeal from the amended decision, dated April 14, 1993, by Administrative Law Judge Harvey C. Sweitzer, issued after a hearing in the mining claim validity contest of the Garden Spot Association Placer Mining Claim. 1/ The contest was initiated on the ground that "minerals have not been found within the limits of the claim in sufficient quantity and/or quality to constitute a discovery of a valuable mineral deposit." (Decision at 2.) 2/ Judge Sweitzer's decision declared the claim null and void for lack of a discovery of a valuable mineral deposit.

1/ Robina Hillis, co-claimant and co-contestee in this mining claim contest, died on Feb. 27, 1989. At her death, her interest in the Garden Spot Association placer claim vested in Davy and Sannaraha Waters. See Contestees' Answer to Contest Proceedings, dated Apr. 23, 1991.

2/ By motion dated Mar. 20, 1992, BLM requested leave to amend the Government's complaint to include an additional charge, to wit: "[T]he contestees['] primary use and purpose for the land is not mining. Contestees use the land primarily as a principle [sic] place of residence and other uses not related to mining." On Mar. 26, 1992, contestees filed an objection to contestant's motion to amend. At the commencement of the hearing on Apr. 23, 1992, Judge Sweitzer allowed the Government's motion to amend as germane and relevant, subject to reconsideration if the contestees were to contend later that their case had been prejudiced by the timing of the granting of the motion to amend. (Tr. 9-11.)

The Government initiated the mining contest on March 27, 1991, after a Bureau of Land Management (BLM) mineral examination of appellants' claim in November 1988 and April 1989. The examination was prompted by appellants' application for patent filed January 7, 1987. Appellants filed an answer to the Government's contest complaint, and a hearing on the matter was held before Judge Sweitzer, at Grants Pass, Oregon, April 23 and 24, 1992, and May 5, 6, 7, and 8, 1992. The hearing in this case was subsequently reopened to take additional evidence on December 29 and 30, 1992. 3/

It appears from the record that Sannaraha Waters obtained title to portions of the Harmon and Bailey claims located in 1896, the Flagstaff claim located in 1905, the Garden Spot claim located in 1927, and the Bridge Placer claim located in 1937. (Ex. 1; Ex. 2; Ex. 20 at Attachment 9.) An amended notice of location was filed in 1986 by Davy Waters, Sannaraha Waters, and Robina Hillis, identifying the claim as the Garden Spot Association placer claim (OR MC 88146). The claim is located in sec. 2, T. 35 S., R. 8 W., Willamette Meridian, Josephine County, Oregon. The claim is situated along Galice Creek, about 1 mile above its confluence with the Rogue River. See Ex. 17. The claim is located in an area with a long history of placer gold mining operations dating back to the last century and a large quantity of tailings from earlier hydraulic mining is exposed on the claim. See Tr. 193; Ex. J at 8. Galice Creek flows through the claim from the southwest corner to the northeast corner. See Ex. 19.

Appellants' patent application for the claim (Ex. 16) was filed with BLM on January 7, 1987. In describing the geology and mineralization of the claim in their patent application, the claimants refer to the findings and conclusions of a 1963 validity examination report, prepared by George E. Zeigler, Valuation Engineer (Mining), BLM, after examining the claims from October 13 to 23, 1962, recommending that "the Flagstaff, Garden Spot, C.E. Harmon and George Bailey, and the Bailey and Anderson placer claims be adjudged valid existing locations." (Ex. C at 5.) 4/

3/ Exhibits introduced into evidence at the hearings by contestant are identified by numbers, and exhibits introduced by contestees are identified by letters of the alphabet.

4/ This report was prepared pursuant to the Act of July 23, 1955, Ch. 375, 69 Stat. 369 (frequently referred to by BLM as P.L. 167). Section 4 of the Act provided that any unpatented mining claim located after July 23, 1955, shall be subject (prior to patent) to the right of the United States to manage the surface resources thereon except locatable minerals. 30 U.S.C. § 612 (1994). Section 5 of the Act established a procedure for adjudicating the right to manage the surface resources on unpatented mining claims located prior to July 23, 1955, involving notice to claimants and a right, upon the filing by the claimant of a verified statement, to a hearing. 30 U.S.C. § 613 (1994). See United States v. Godwin, 8 IBLA 258 (1972). A decision not to challenge the claimant's right to use the surface resources on the claim does not preclude a subsequent decision to contest the mining claim for lack of discovery. See United States v. Harper, 8 IBLA 357, 361-62 (1972).

Appellants' patent application identifies the placer deposits as "the ancient channel deposit, terrace and stream bed deposits derived from the erosion of the ancient channel by the present drainage system." (Ex. 16 at 4.) Miles J. Mitchell, consulting geologist, testified at the hearing to the existence of three types of reserves on the claim: stream gravels, premined gravels remaining from former hydraulic mining operations, and high bench "virgin" gravels. (Tr. 441.) The patent application specifically identified gold-bearing terraced gravel deposits "occurring at 15, 30, 45 and 60 foot horizons above the present drainage and the stream beds." Id. at 5. The map included in the application showed discovery points in virgin gravel placer deposits on the claim. Id. at 8. Claimants had been mining since the early 1980's starting with a dredge on China Creek where it enters Galice Creek. (Tr. 524-30, 566.) They recovered more than 3 ounces of gold mining with hand tools prior to 1989, when they started to acquire mechanized equipment. (Tr. 566.)

Gerard Capps, a geologist and BLM mineral examiner, conducted field examinations of the claim and took mineral samples in November 1988 and April 1989. (Tr. 168.) He prepared a report on his validity examination which was introduced into evidence. (Ex. 20.) Capps took samples from the virgin bench gravels at various sample locations on the claim marked as sample points GS-1 through GS-5 and GS-7 through GS-9 on a map of the claim. (Ex. 19.) Sample GS-6 consisted of "a swath of bedrock 6" to 8" deep by 7 feet long" cut with a bucket loader. (Ex. 20 at 9.) This sample was taken because claimant "felt there was gold within the bedrock of the mined out areas." Id. The gravel samples were taken with a front end loader (Tr. 208-11) and a backhoe. (Tr. 225, 445-47.) Capps testified that he relied heavily on claimants' input for places to sample. (Tr. 186.) He did not sample either the streambed gravels (Tr. 347) or the premined gravels (tailings) on the claim. (Tr. 386.)

Explanations for Capps' failure to sample these deposits varied somewhat in the testimony. Claimant Davy Waters stated that, at the time of Capps' sampling, he asked Capps about sampling the creek and Capps indicated that he believed the "test was good enough that it wasn't necessary" to sample from the creek gravels. (Tr. 728.) On cross-examination, Capps testified as follows to the issue of sampling the creek:

> Claimant's Attorney: * * * You didn't sample the bed of Galice Creek, did you?
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> BLM Mineral Examiner: No, I didn't.
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> Claimant's Attorney: Did you have a reason for not doing that?
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> BLM Mineral Examiner: It wasn't mentioned in the patent application, and the patent application primarily describes--and the economics--all do not mention anything about dredging Galice Creek. So, I didn't sample Galice Creek.
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> Claimant's Attorney: Did not Mr. Waters ask you to sample it?

BLM Mineral Examiner: He asked me in a manner that was--you know, that we're looking at the ten-acre rule at the time, and all of the samples that he had taken covered the ten acres along Galice Creek; and my response was, if you have satisfactory results from each and every of these ten acres--the samples--then there would not be a necessity to do a dredge sample.

Claimant's Attorney: If you were going to make an accurate evaluation of these claims as to whether they contained valuable gold deposits, would you not include the gravels of the creek?

BLM Mineral Examiner: Well, my response to that is that there are several side streams that come into the claim also, and I didn't sample the several side streams with placer deposits with a dredge either; and I took 14 samples based on his patent application, and I didn't see a necessity to start dredging on the claim. If he would have said he had intended to dredge on the claim and his economics showed that, I would have dredged on the claim.

Claimant's Attorney: You were aware there are valuable minerals in that creek?

BLM Mineral Examiner: Yes.

(Tr. 347-48.)

After recovering the gold from the samples, Capps computed the volume of each sample and calculated a value per loose cubic yard (LCY) 5/ of resource at the sample point. (Ex. 20 at 13, Table 1.) Averaging the samples from those areas in which he had more than one sample, he determined an average value per LCY for each sample area. (Ex. 20 at 15, Table 3.) Capps calculated the volume of the virgin gravel deposits exposed on the claims in LCY's by sample area, designated A through E. (Tr. 266-67; Ex. 20 at 15, Table 2.) Multiplying the average sample value by the volume of the resources in each sample area, Capps computed a resource value for each sample area. (Ex. 20 at 15, Table 3.) He then made an economic analysis, estimating capital and operating costs for the operation and subtracting these costs from the net value of recovered gold after discounting for fineness 6/ and marketing. (Ex. 20 at Table 4.) In determining a cut-off grade for the sample areas, Capps found that the operating costs for the two highest value areas coupled with capital costs

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5/ The volume of placer samples taken from the virgin and premined gravels was measured in terms of the quantity of the sample after severance from the deposit, i.e., LCY's.

6/ Fineness has been defined as: "The degree of purity of gold, for example, gold 950 fine contains 950 parts of pure gold and 50 of other matter." U.S. Department of the Interior, Bureau of Mines, A Dictionary of Mining, Mineral, and Related Terms 427 (1968). In other words, 950 fine gold is 95 percent pure.

exceeded the value of the samples when discounted 20 percent for fineness and marketing. See Ex. 20 at 16. Finding that the projected cash flow was negative, Capps concluded claimants had not discovered a valuable mineral deposit, i.e., that a reasonably prudent man would not invest his labor and capital in the operation in the reasonable expectation of developing a paying mine. (Ex. 20 at 1, 17; Tr. 312-13.)

When the Government challenges the validity of a mining claim, it has the burden of presenting sufficient evidence to establish a prima facie case that the claim is invalid. United States v. Springer, 491 F.2d 239, 242 (9th Cir. 1974), cert. denied, 419 U.S. 834 (1974); United States v. Pool, 78 IBLA 215 (1984). A prima facie case is generally deemed to have been established when a Government mineral examiner testifies at the hearing that he has traversed a claim, sampling exposed areas of mineralization identified by the claimant and himself, and renders an opinion on the basis of that examination that no valuable mineral deposit has been discovered on the claim. Hallenbeck v. Kleppe, 590 F.2d 852, 859 (10th Cir. 1979); United States v. Bagwell, 143 IBLA 375 (1998); United States v. Mavros, 122 IBLA 297, 306-08 (1992). 7/ Once a prima facie case has been established, the burden shifts to the contestee to overcome that case by a preponderance of the evidence. Hallenbeck v. Kleppe, 590 F.2d at 856; United States v. Zweifel, 508 F.2d 1150, 1157 (10th Cir. 1975), cert. denied, 423 U.S. 829 (1976); United States v. Husman, 81 IBLA 271, 275 (1984).

At the close of the Government's testimony, contestees proceeded to present their case. Contestees' case was focused on the testimony of Miles J. Mitchell, a consulting geologist hired to make a determination of the economic value of the gold resources on the claim. In February 1991, contestees hired Mitchell, a registered professional geologist in the State of Oregon, and his partner Ernest Tuchek, also a geologist, to conduct an evaluation of the Garden Spot Association Claim to determine the gold content of the gravels on the claim and to measure possible minable reserves. See Ex. J at 1. Mitchell testified that his expertise was in the economics of small mines and that he had, since 1970, undertaken 20 mineral placer examinations for small miners. (Tr. 439.)

Mitchell described his methodology and approach to assessing the gold values on the Garden Spot Association Claim as follows:

> After I became familiar with the geographic area of the property, then I computed a map--a working map--and I determined that there were three types of reserves on the property. * * * So there were three different categories that I looked at. One was the stream gravels in the Galice channel itself. I believe I

7/ We have noted that the credibility of the contestant's mineral examiner may be impaired by the failure to look for and examine reported exposures of significance. United States v. Highsmith, 137 IBLA 262 (1996), appealed sub nom., Hjelvik et al. v. Babbitt, Civ. No. 97-024-BLG (D. Mont. Feb. 28, 1997).

> came up with something like 16,500 yards more or less and then I looked at the pre-mined gravels which constituted the bulk of the land area on the * * * claim. * * * And then finally, the virgin gravels and the general term that was used by local miners was the 'old channel gravels,' but in actuality, they are high bench gravels.

(Tr. 441.) Pursuant to their general examination of the claim, Mitchell and Tuchek sampled the virgin gravels as had the BLM mineral examiner. Additionally, they took samples from the premined gravels or hydraulic mining tailings found on the claim in great abundance. They took 14 samples but actually evaluated only 7, asserting that the others had been spoiled by rain and extremely wet weather conditions at the time of the sampling. (Ex. J at 2; Tr. 453.) Mitchell testified that it was not possible to obtain valid samples in heavy rain or from saturated ground. 8/

The Mitchell/Tuchek report details sampling procedures as follows:

> Excavation of the samples was accomplished with a 750 Case backhoe equipped with an 18 inch bucket. Samples were processed through a one yard per hour testing trommel containing a vibrating riffled table. Gravels were deposited into a measured container capable of holding 1/2 cubic yard of material minus the swell factor (20%). * * * A minimum of two 1/2 yard samples were generally taken from each site at different horizons within the gravel zone.

(Ex. J at 2.) Samples were taken in the premined gravels (HB-AA, HB-BB, and HB-E) and virgin gravels (GS-4, GS-5, Bridge #2, and Bridge #2B). Dredge samples were also taken from Galice Creek (BG and GC). (Tr. 454-55; Ex. H.) The Mitchell/Tuchek evaluation of the seven samples taken from premined and virgin gravels from February to April 1991 yielded the following values per LCY at a gold price of $360/troy ounce: HB-AA (1 CY) $3.28; HB-BB (1 CY) $5.80; HB-E (1/2 CY) $9.20; GS-4 (2 CY) $2.88; GS-5 (1 CY) $7.45; Bridge #2 (2 CY) $10.99; Bridge #2-B (3 CY) $5.64. (Ex. J at 9.) Contestees' creek bed dredge samples BG and GC showed values of $23.21 per CY and $12.40 per CY, respectively. (Ex. H; Tr. 454-55.)

The values reported by Mitchell/Tuchek for the premined and the virgin gravels ranged from $2.88 to $10.99 per LCY, with the price of gold at $400 per troy ounce and a fineness factor of 900. (Ex. J at 4, 9; Tr. 454.) Mitchell/Tuchek identified the value of minable reserves on the claim as: 141,860 CY of premined gravels at an average value in recoverable gold of $5.72 per CY and 64,256 CY of high channel and other related virgin gravels

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8/ When asked his opinion on the validity of samples GS-1 and GS-2, taken by the Government mineral examiner in November 1988 in heavy rain, and GS-4 and GS-7, taken in light rain in November 1988, Mitchell stated: "You cannot get an accurate sample in a wet environment. It just--the gold particles are dispersed in the process of excavating and it just--you just can't do it and come out with an accurate sample." (Tr. 483.)

at an average value in recoverable gold of $8.32 per CY. (Ex. J at 5, 7, 8.) Mitchell/Tuchek also stated the "[r]esults indicate the richest gravels on the Garden Spot Ass'n Claim are located at or near the exposure of the old channel on the northern end of the Bridge claim." (Ex. J at 6.)

In his testimony, Mitchell referred to both the Zeigler report described in the patent application and the later BLM report prepared by William Nelson. Subsequent to the Zeigler report which was prepared in the surface rights proceeding, a report appraising mineral values on the claim was prepared by BLM Mining Engineer William Nelson in 1969. (Ex. D.) The Nelson report was prepared for the purpose of determining the "damages to the mineral estate" caused by acquisition of the right-of-way for construction of the Galice Creek access road. (Ex. D at 2.) Three of the claims sampled (A, B, and C) are now part of contestees' Garden Spot Association placer claim. See Ex. 1. Samples were taken from the bench (virgin) gravels. Id. at 3. The report noted that: "Bedrock was exposed in all samples and was cleaned by hand." Id. at 4. Values were found to average $1.75/CY based on a fineness factor of 900 and a price of gold at $43/troy ounce. Id. Capps acknowledged on cross-examination the values found in the Zeigler report, in which a sample on the Garden Spot claim returned $1.91/CY at a gold price of $35/troy ounce, and in the Nelson report. (Tr. 353-55, 358-60.) Further, Capps conceded that the values at current gold prices would be approximately $19/CY and $15-16/CY, respectively. (Tr. 358, 360.) Mitchell testified that his report corroborates the Zeigler and Nelson reports and noted that no mechanized mining had been carried out on the claim between the time of the Zeigler and Nelson reports and his evaluation of the claim, completed in 1991. (Tr. 459.)

Mitchell also addressed the values in the streambed gravels in his testimony. He estimated the presence of 16,533 CY of streambed gravel resources on the claim. (Ex. L.) Based on an average sample value of $17.81 per CY, he projected the value in recoverable gold as $294,453. Id. Mitchell estimated a suitable dredge could be obtained for about $1,000 and that additional costs would include one man's labor for operation of the dredge and fuel costs of $3 to $4 per day. (Tr. 472-73.) Based on an average grade of $17.80/CY, Mitchell estimated that the net profit after expenses for development of the streambed gravels would be $242,000. (Tr. 710-12; Ex. S.) Bart Rector who operated the dredge on Galice Creek when obtaining claimants' dredging samples had 10 years experience in suction dredge mining, four or five of which were spent in the Galice area. (Tr. 493-94.) He testified that, using his suction dredge, he dredged 2 CY's of gravel in 2 hours for sample BG and dredged 1 CY of gravel in 1.5 hours for sample GC. (Tr. 495.) Rector obtained values of $25.73/CY and $13.78/CY, respectively, using a price of gold of $400/troy ounce without the deduction for the fineness factor. 9/ (Tr. 495.) He

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9/ Rector testified that he used the $400 per troy ounce because that amount matched the figure used by the BLM mineral examiner in evaluating the virgin gravels on the claim. (Tr. 495.) Mitchell valued the gold in Galice Creek at $360 per troy ounce, explaining that he used a formula that first multiplied the fineness factor (900/1,000) by $400 per troy ounce to arrive at $360 per troy ounce. (Tr. 693.)

further stated his opinion that the dredge samples are representative of the streambed gravels for the length of the claim. (Tr. 507.) It was also stated by Rector that similar values were returned from dredging operations on adjacent claims downstream. (Tr. 496.)

As the result of their analysis of the mineral values on the claim, Mitchell and Tuchek concluded that a prudent and experienced miner can conduct a profitable small-scale placer gold mining operation on the Garden Spot Association Claim, a site Mitchell described as "a sensitive area," because of its geography. (Ex. J at 5; Tr. 461-62, 470.) Mitchell testified that a small-scale operation was better suited to the physical limitations imposed by the steep canyon terrain and the location of the gravels. (Tr. 470, 477.) More specifically, he stated that

> if you're going to conduct a large-scale mining operation, you need a lot of acreage that's relatively flat, because you're going to need bigger tailing ponds. In fact, you're going to need 3 tailing ponds if you get into a situation where you are processing, let's say, 50 or 100 yards an hour or something like that. You're going to need 3 tailing ponds and they are going to have to be at least an acre apiece, because you've got a tremendous amount of clay and silt that's coming out of these washed gravels that has to be disposed of.

(Tr. 470-71.)

Mitchell and Tuchek found that gold values recovered in their sampling averaged $8.32 per CY for the virgin gravels (Ex. J at 7) and $5.72 per CY from the premined gravels or hydraulic tailings. (Ex. J at 8.) They note that the premined hydraulic tailings can be mined cheaply and hauled to the claimant's wash plant with little difficulty. (Ex. J at 4.) Mitchell testified that in his opinion, standing alone, the premined gravels have sufficient value alone to be mined at a profit. (Tr. 461.) Additionally, Mitchell, who had experience as a hydraulic miner, asserted that it was his opinion that "little islands of virgin gravel," would be found beneath the premined gravels, thus increasing claimants' profits even more. Id.

At the close of the contestees' case at the hearing on May 8, 1992, counsel for the Government moved for a summary decision asserting that contestees had failed to meet their burden of overcoming the Government's prima facie case and establishing a discovery by a preponderance of the evidence, because their evidence introduced at the hearing related primarily to streambed and premined placer deposits on the claim which were not cited as discovery points in the patent application, had not been discovered at the time the certificate of mineral entry was obtained on October 11, 1990, and had not been identified as a discovery at the time of the validity examination. (Tr. 765-70.) In the alternative, counsel for BLM proposed an "order that would permit the Government to validate or verify the sampling results that [were] presented * * * by [contestees]." The Motion for Summary Decision was taken under advisement by Judge Sweitzer. (Tr. 766.) Counsel for the Government went on to state that "if [contestees'] gold samples can be verified, we would withdraw

our contest to the patent application." (Tr. 776.) 10/ On July 8, 1992, Judge Sweitzer issued an Order to Test and Confirm Gold Values, in which the parties stipulated to the terms and conditions of a joint mineral sampling of the two areas of the mineral deposit on the claim not sampled by the BLM mineral examiner in November 1988 and April 1989. The order "contemplated that the data from the resampling would be entered into the record without further hearing." (Amended Decision at 3.) Pursuant to the order, the parties conducted a joint sampling of premined gravels on the claim and the gravels in Galice Creek as it flows through the claim.

On September 15, 1992, contestees filed a request to reopen the hearing to submit evidence related to the joint resampling. After initially denying contestees' request, Judge Sweitzer sua sponte ordered the hearing reopened pursuant to a review of contestees' submission of the resampling results, an offer of proof, and subsequent briefs filed by the parties. Additional testimony was given on December 29 and 30, 1992.

After the completion of the reopened hearing, Judge Sweitzer issued his decision, finding the mining claim null and void for lack of a discovery. He held that a discovery must exist on the date of issuance of the final certificate, citing United States v. Whittaker (On Reconsideration), 102 IBLA 162 (1988). Finding that the virgin gravels, the premined gravels, and the streambed gravels constituted separate mineral deposits (Decision at 8), Judge Sweitzer held that there was no discovery of gold in the premined gravels or streambed gravels prior to October 11, 1990, and, hence, the evidence of gold found in those deposits is irrelevant to the validity of the claim. Id. at 10. After analyzing the sample evidence of the value in gold per LCY of the virgin gravel deposits and the evidence of the costs of mining and recovering that gold, the Administrative Law Judge concluded that the costs of mining the virgin gravels would exceed the anticipated return and, hence, the claim was invalid for lack of a discovery. (Decision at 16-17.)

The threshold issue raised by this appeal is the propriety of the Administrative Law Judge's ruling that evidence of the value of gold recoverable from the premined and stream deposits is not relevant to the issue of a discovery on this claim because the premined gravels and the streambed gravels constitute mineral deposits which were separate and distinct from the virgin gravels and were unknown prior to October 11, 1990. In their Statement of Reasons (SOR) for appeal, appellants contend that the premined gravels did not constitute a new deposit which was unknown and undiscovered at the time their patent application was filed. (SOR at 12, 15-17.) Appellants contend that the premined and Galice Creek gravels are part of the same deposit as the virgin gravels. Id. at 16. Appellants assert that all the placer gold on the claim originated from one source. Id. at 18-19. Further, appellants note that the BLM mineral examiner acknowledged the relevance of values in premined and streambed gravels in his testimony. Id. at 18.

10/ Counsel for the Government later withdrew this proposal, stating that she lacked authority to make the offer, since the contest could not be withdrawn unless there were a finding that a valid discovery had been made. (Tr. 1029.)

In the BLM Answer, counsel argues that there was no exposure of gold in the premined gravel deposit or the Galice Creek gravel deposit prior to issuance of the certificate of mineral entry. (Answer at 11-12, 16.) Hence, BLM contends that there was no exposure of a valuable mineral deposit in these gravels. Id. at 11-12. Thus, BLM asserts that the premined and streambed gravels are separate deposits. Id. at 19.

[1] The location of a valid mining claim and the right to obtain patent to that claim requires a showing of the existence of a valuable mineral deposit within the boundaries of the claim. 30 U.S.C. § 22 (1994); United States v. Coleman, 390 U.S. 599 (1968); United States v. Mavros, supra, at 301-02; United States v. Hamersley, 84 IBLA 377, 379 (1985). A critical requirement is that the deposit be physically exposed at the time of discovery, which must predate any segregation from mineral entry. No further exploration to obtain such an exposure may be permitted after closure of the land to mineral entry. United States v. Mavros, supra, at 302. As a general rule, the Board has held that, when "a patent application is involved and final certificate has issued, the question of present marketability must be determined by reference to the date on which the claimant fulfilled all of the prerequisites to the making of the entry, i.e., no later than the date of the issuance of the final certificate." United States v. Whittaker (On Reconsideration), supra, at 166. While the focus of the Whittaker decision was on marketability, in terms of the price of the mineral material, we are unable to limit this precedent to market price considerations as appellants have argued.

A distinction is properly drawn, however, between discovery of a valuable mineral deposit and the samples taken to verify the value of the deposit. In United States v. Foresyth, 100 IBLA 185, 207, 94 I.D. 453, 465 (1987), we noted that

> the acts of sampling and assaying are acts which either confirm or disprove the existence of a discovery. Thus, if there was a disclosure of mineral at the date of withdrawal from mineral entry, that disclosure is a discovery of valuable mineral if subsequent sampling, assaying, and testing confirm the fact that the disclosed mineral is valuable. Thus, assay results from diamond-drill intercepts of the mineralized zone will support a conclusion that there was an exposure of valuable mineral if reasonable geologic projection leads to a conclusion that the intercept and the exposure are from the same mineralized structure.

The term "placer deposit" has been defined as: "A mass of gravel, sand, or similar material resulting from the crumbling and erosion of solid rocks and containing particles or nuggets of gold, platinum, tin, or other valuable minerals, that have been derived from rocks or veins." U.S. Department of the Interior, Bureau of Mines, A Dictionary of Mining, Mineral, and Related Terms 829 (1968). The testimony at the hearing disclosed the exposure of three forms of placer material on the claim: the virgin or high bench gravels, the premined gravels, and the streambed gravels. (Tr. 441, 454-55; Ex. H.) Appellants' patent application focused on discovery points in virgin gravels on the claim, but also noted the presence

of "terrace and stream bed deposits derived from the erosion of the ancient channel by the present drainage system." (Ex. 16 at 4.) The testimony at the hearing was that gold in the old channel (virgin or bench) gravels had actually eroded from higher elevations and been deposited in the creek drainage. (Tr. 514.)

There can be no question that premined gravels and streambed gravels were exposed on the claims and the fact that those gravels contained gold was known to BLM and the claimants well before issuance of final certificate, well before the date of the mineral examination, and well before the hearing. Bruce Crawford who mines his own claim approximately 1.5 miles upstream stated that he would expect to find valuable gold in premined tailings and in bedrock. (Tr. 516-17.) Gerard Capps, the BLM mineral examiner, acknowledged having observed the premined gravels (old mine tailings) left from prior mining of the bench gravels on the claim. (Tr. 193.) Additionally, claimants' belief that there was gold within the bedrock of the mined out areas, acknowledged in Capps' report (Ex. 20 at 9), confirms claimants' knowledge of placer gold on the claim at locations outside the virgin gravel deposit. Further, Capps testified that he elected not to sample the gravels in the bed of Galice Creek even though he knew that gold values probably existed in the stream gravels. (Tr. 347.) Thus, regardless of the reason Capps chose not to take samples from the premined gravels or the streambed gravels, it is clear from the record that these were known placer gold deposits exposed on the claim at the time of his inspection.

The mineral examiner is not obligated to develop the information required to support a patent application. 11/ If the information presented by the claimant is insufficient to support a patent, the proper procedure is to direct the claimant to submit additional evidence in support of the application. If such evidence is not forthcoming, the patent application may be rejected subject to the right of appeal. If, however, the decision is made to contest the validity of the claim on the ground of lack of discovery of a valuable mineral deposit, the claimant is not limited by the evidence submitted with the patent application.

[2] When a mining claimant fails to insist upon sampling of valuable portions of the placer deposit exposed on the claim by the Government's examiner, or declines to accompany the examiner to the claim, he assumes the risk that the Government examiner will be unable to verify the alleged discovery of a valuable mineral deposit. United States v. MacLaughlin, 50 IBLA 176, 180 (1980); United States v. Knecht, 39 IBLA 8 (1979); United States v. Bechthold, 25 IBLA 77 (1976). We are aware of no support for the proposition that the failure of the mineral examiner to sample relevant

11/ The field examination conducted by a mineral examiner as a result of a mineral patent application is undertaken to verify the quantity and quality of the mineralization and the accuracy of the statements regarding the costs and returns from the sale of the minerals submitted in support of the mineral application. The examiner's primary responsibility is to assure the accuracy and truthfulness of the information submitted by the claimant.

exposures of the placer deposit found on the claim, especially deposits known to have value, precludes the mining claimant from presenting evidence of the value of the deposit at a contest hearing. In the case of Oregon Basin Oil (On Rehearing), 50 L.D. 253, 255-56 (1924), cited by the Administrative Law Judge, the deposit was not exposed within the limits of the contested mining claim and the deposit was projected to occur within the boundaries of the claim from an exposure outside the claim. This is distinguishable from the present case. Similarly, cases such as United States v, Feezor, 74 IBLA 56, 90 I.D. 262, vacated in part on reconsideration, 81 IBLA 94 (1984), cited by BLM, dealing with the requirement of the disclosure of a valuable deposit as it relates to limitations on the projection of valuable resources from exposed portions of a lode deposit to unexposed portions of that deposit, is not germane to the issue of the validity of the exposed placer deposit.

To the extent that the Administrative Law Judge relied upon the precedent in United States v. Hamersley, supra, to reject evidence of mineral values in the premined gravel deposits and streambed gravel deposits exposed on the claim, he misperceived our holding therein. In Hamersley we found that evidence of mineral values in exposed placer deposits not sampled by the Government mineral examiner were sufficient to overcome the prima facie case of lack of discovery of a valuable mineral deposit. While noting that dismissal of the contest was not sustainable in the absence of a discovery at the time of withdrawal of the land from mineral entry, we declined to modify the Administrative Law Judge's finding in Hamersley that the contestee had rebutted the prima facie case of lack of discovery with his showing of valuable minerals present in portions of the placer deposit exposed on the claim at the time of withdrawal. 84 IBLA at 382. Accordingly, we reverse the holding of the Administrative Law Judge that the premined gravels and the streambed gravels constituted separate mineral deposits not known to exist on October 11, 1990, and find that a proper analysis of the presence of a discovery cannot ignore those placer gravels exposed and known to exist on the claim at the relevant time.

The Board of Land Appeals, as the delegate of the Secretary of the Interior, has the authority to make decisions concerning appeals relating to the use and disposition of the public lands and their resources as fully and finally as might the Secretary himself. 43 C.F.R. § 4.1. We have previously held that:

> This authority includes the power to make a de novo review of the entire administrative record and to make findings of fact based thereon. While we recognize the propriety of deferring to the Administrative Law Judge's findings where a witness' demeanor affects his credibility, our authority to make findings of fact which may differ from the former's is not limited by the substantial evidence rule * * *. "On appeal from or review of the initial decision, the agency has all the powers which it would have in making the initial decision * * *" 5 U.S.C. § 557 [(1994)].

United States v. Dunbar Stone Co., 56 IBLA 61, 67-68 (1981); see U.S. Steel Mining Co., Inc. v. OSM, 132 IBLA 121, 124 n.1 (1995). In view of the Administrative Law Judge's error in failing to consider the value of the

gold contained in a substantial portion of the exposed gravel deposit on the Garden Spot Association placer claim, we deem it appropriate to review this matter de novo.

[3] There has been a discovery when minerals have been found in sufficient quantity and quality that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine. United States v. Coleman, 390 U.S. 599, 602 (1968); Castle v. Womble, 19 L.D. 455, 457 (1894). To prevail in the contest, claimants essentially were obligated to produce evidence of a mineral deposit which can be mined, removed, and marketed at a profit. United States v. Coleman, supra; see McCall v. Andrus, 628 F.2d 1185 (9th Cir. 1980); United States v. Kaycee Bentonite Corp., 64 IBLA 183, 89 I.D. 262 (1982). Although the Court of Appeals for the Ninth Circuit (Oregon is located within the Ninth Circuit) has held that a mining claimant need not show the profitability of a mining claim located for a precious metal (gold) at the time of the hearing and, hence, a showing that the gold can presently be extracted, removed, and marketed at a profit is not required, it has held that evidence of the costs and profits of mining the claim should be considered in determining whether a person of ordinary prudence would be justified in the further investment of his labor and capital with a reasonable prospect of success in developing a mine. Lara v. Secretary of the Interior, 820 F.2d 1535, 1541 (9th Cir. 1987).

In ruling on the issue of a discovery, the Administrative Law Judge's decision considered all of the samples taken by both of the parties in 5 areas of the virgin gravel deposit (labeled A through E on Ex. 19). After expressing the sample values in troy ounces of gold per LCY, the Administrative Law Judge calculated the average values for each virgin gravel area, taking the broader range of samples into consideration. (Decision at 12.) Finding that the average price of gold for the 6-year period ending in October 1990 was $389.17 (Ex. 21), the Administrative Law Judge used a price of $390/troy ounce and, applying the 900 fineness factor used by Mitchell, found the highest gold value for any of the virgin gravel deposit to be $5.55/LCY for the virgin gravels in Area D. (Decision at 13.) This value was significantly lower than the average value of $8.32/LCY which Mitchell obtained on the basis of his samples, Bridge #2 and #2B (Ex. J at 4, 7, and 9), due to the inclusion of the lower values obtained by Capps in samples GS-3A and GS-3B.

Appellants have argued on appeal that a gold price of $400/troy ounce should be used in evaluating the claim in this contest proceeding as it was used in the Government mineral examiner's validity report (Ex. 20 at 16) and the 1992 resampling report. While appellants have not established error in the Judge's use of a $390/troy ounce price based on the evidence of record, see In Re Pacific Coast Molybdenum, 75 IBLA 16, 90 I.D. 352 (1983), we note that both the Government and the claimants used $400 as a reasonably projected price for gold, and we will use this value for the purpose of our analysis, despite the fact that both the value used by the Administrative Law Judge and the contemporary price for gold in October 1990 were lower.

The highest return for the mined product, when sold was described by the claimant's witness, Mitchell. According to this witness a gold refiner would pay more for the gold than the typical purchaser of gold in the Portland, Oregon, area and a prudent miner would send the concentrated gold to a refiner. In support of this contention, claimants submitted Exhibit R and described that exhibit as a typical schedule of refining costs. (Tr. 695.) Using that schedule as the basis for estimating the actual return to the claimant, we note that the spot price of gold was used as the starting point. A deduction of $2/troy ounce for a refining charge is made (regardless of the quote price). (Ex. R.) Further, there is a 2-percent deduction from the quoted price (stated as payment at 98 percent of the spot value). Id. Applying the smelter charge as a reduction in the selected value of the gold ($400/oz) reduces the amount the claimants would receive to $390 per troy ounce of gold.

The fineness of the gold found on the claim was an issue at the hearing. As noted previously, Capps took a deduction of 20 percent for fineness and marketing expenses. (Tr. 290.) Capps acknowledged on cross-examination that Galice Creek placer gold had been recognized by the Oregon Department of Geology and Minerals as better than 900 fine (Tr. 418; Ex. G), but did not agree with that assessment. (Tr. 425.) Mitchell calculated the values on his samples on the basis of 900 fine. (Tr. 454; Ex. J at 4.) Bruce Crawford, a miner with placer mining experience on Galice Creek testified to a fineness of 850 to 900. (Tr. 514.) At the continued hearing, Capps testified that the coarser gold from the placer gravel joint samples was determined by the metallurgical laboratory which processed the samples to contain about 8 percent by weight of host rock (nonmetallic) and a gold fineness of about 90 percent with the balance of the metal being silver, copper, and iron. (Ex. 35 at 23, Attachment 4; Tr. 983.) Thus, the value of the gold in the joint samples was computed on the basis of 82.483 percent of the weight of the larger gold particles separated plus 90.287 percent of the weight of the gold obtained by amalgamation (which did not contain nonmetallic materials). Id.

We conclude that the evidence of record supports a finding that the gold content of the placer gravels is equal to approximately 82 percent of the weight of the larger gold particles recovered and approximately 90 percent of the gold recovered by amalgamation. The amount of gold recovered from larger gold particles in the joint resampling is approximately 83 percent of the weight of gold recovered with approximately 17 percent of the weight of gold recovered consisting of amalgamated gold (free from nonmetallic impurities and thus 90 percent fine). See Ex. 35 at 33. Accordingly, we find that the average fineness of the recovered gold is approximately 850. This purity is close to the historic purity of gold coming from the general area. The material recovered from the virgin gravels was 850 fine gold. To calculate the value of that material it is necessary to deduct 15 percent of the weight of the recovered material to determine the weight of the contained gold which would be valued at $390/troy ounce (net).

Applying this value per troy ounce of contained gold to the samples of virgin gravel from Area D, which contains 1,100 LCY's of virgin gravel,

because this resource block showed the highest value, the value of this resource block in dollars per LCY is as follows:

Area D:

Sample No.	Sample Size	Recovered 850 Fine Gold in Ounces/LCY	Recovered Gold in Ounces/LCY	Value of Recovered Gold in $/LCY
Bridge 2	2.0 CY	.0307	.0261	$ 10.18
Bridge 2B	3.0 CY	.0158	.0134	5.24
GS-3B	1.2 CY	.0092	.0078	3.05
	Average Value			$ 6.16

A fourth sample, GS-3A, returned the lowest value for Area D. The claimants objected to this sample at the time that it was taken. (Ex. 20 at 9.) Although the value returned from this sample (which was lower than the other samples in Area D) was included by the Administrative Law Judge in determining the value of the resource in Area D, we have omitted this sample.

The mining method most likely to support a discovery was the mining method proposed by the appellants. Trees, ground cover, and the overburden would first be removed. The stripping rate was projected to be 5,000 cubic yards per day. The report contemplated rental of the dozer, which would be operated by the claimant. Once the gravel is exposed, it would be excavated, loaded into a truck with a wheel mounted loader, and transported to the washing facility on the claim. The production rate would be 5 LCY per hour. Following processing the washed gravels would be replaced in the mined out area. The operation would be run by the claimant and his wife without hiring additional help. The time necessary for reclamation of and return of topsoil to the virgin gravel areas was estimated at 10 days. During stripping and reclamation it would be necessary to rent a dozer.

[4] Application of the prudent man standard also requires consideration of the costs of producing the gold. The operating costs ($2.21/CY of virgin gravel resources) estimated by claimants (Ex. J at 7) was deemed reasonable by the Administrative Law Judge subject to certain additions. 12/ Appellants testified that they planned to operate the claim

12/ The Administrative Law Judge declined to use the evidence presented by the Government with respect to operating costs. Capps testified that costs he used were for an operation processing 300 CY/hour (Tr. 379), a rate much higher than the 5 CY/hour proposed by claimants. (Ex. J at 6; Tr. 462.) His cost projections were taken from a U.S. Bureau of Mines Cost Estimating Handbook. (Ex. 20 at Table 4; Tr. 280.) Capps acknowledged that the authors of the Handbook did not deem those estimated costs applicable to an operation with the capacity envisioned by claimants. (Tr. 399.)

without hiring any help. The assertion that labor costs need not be considered because claimants plan to do the work themselves is contrary to long-established precedent. "There is no reason to consider the value of the labor of a locator or the use of his mining equipment any differently from that which he might hire. Either one must be taken into consideration in determining the likelihood of a profitable venture being established." United States v. Garner, 30 IBLA 42, 67 (1977). As the Administrative Law Judge properly noted, the value of the claimants' labor must be considered in determining whether a prudent man would invest his labor and capital with a reasonable prospect of success in developing a paying mine. United States v. Alexander, 17 IBLA 421 (1974); United States v. White, 72 I.D. 522, 526 (1965), aff'd, White v. Udall, 404 F.2d 334 (9th Cir. 1968).

The labor rate of $13.75/hour for an equipment operator and $5/hour for a laborer used in appellants' revised cost estimates submitted after completion of the Government sampling (Ex. 20 at Attachment 7; Tr. 292) was deemed reasonable by the Administrative Law Judge. When wages are paid overhead expenses are incurred. These expenses include costs such as unemployment taxes, workers' compensation contributions, and social security contributions. Although it is lacking in detail, the best evidence of these costs is found on page 7 of Exhibit 35. We accept that estimate of 25 percent of the amount paid in wages for the purpose of this analysis. Adding this amount to the direct labor cost and dividing by appellants' proposed mining rate of 5 LCY/hour results in a $4.69 per LCY total labor cost.

We accept the claimants' estimate that the cost of tree and ground cover removal would be $0.04 per LCY of virgin gravel. The appellants estimate the labor and equipment cost of removal of overburden is $66 per hour. (Ex. 20, Attachment 7.) Judge Sweitzer noted the conflicting evidence regarding the amount of overburden that could be stripped in an 8-hour day in footnote 6 of his Opinion. We find that the removal of 4,000 LCY of overburden in an 8-hour shift to be a reasonable estimate. Therefore, the estimated time to remove 5,100 cubic yards of overburden from resource Area D would be 10 hours, resulting in a cost of $660. The estimated cost for removal of overburden is $0.60 per LCY of virgin gravel. The Judge accepted the claimants' estimate of direct operating costs (exclusive of labor) as being the best estimate of those costs, and we do as well. That amount is $1.25 per LCY. (Ex. J at 7.) We also agree with his finding that a maintenance cost of $0.09/LCY is reasonable and his acceptance of appellants' projected reclamation cost.

Summary

Labor cost	4.69
Direct operating cost	1.25
Timber removal	.04
Overburden removal	.60
Maintenance	.09
Reclamation	.14
Total cost	6.81

Arriving at a cost of production, we deem it unnecessary to make a per LCY estimate of other costs, such as startup and shutdown costs not related to reclamation, depreciation, unrecoverable capital costs, permitting costs, or the cost of other overhead items such as accounting. Although, for the reasons set out above, our analysis does not track the analysis made by Judge Sweitzer in all respects, our conclusion is the same. The virgin gravels on the Garden Spot claim do not represent a discovery of valuable mineral on that claim. 13/

Appellants have failed to show error in the Administrative Law Judge's decision to the extent it analyzed the marketability of the gold found in the virgin gravels. 14/ As noted above, however, the issue of a discovery on this placer claim cannot be analyzed without reference to the premined gravels and the streambed gravels. Accordingly, we have reviewed the evidence with respect to these aspects of the placer deposit.

The purpose of the joint resampling authorized by the Administrative Law Judge was to obtain further evidence of the value of the premined gravel and streambed gravel deposits exposed on the claim. The evidence presented on behalf of claimants at the original hearing contained only

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13/ Judge Sweitzer's amended decision goes on to state on page 21: "In light of this declaration, no decision need be rendered regarding BLM's contention that `the contestees [sic] primary use and purpose for the land is not mining [but] * * * as a * * * residence and other uses not related to mining.'"

14/ Appellants have filed, along with their SOR, an attachment identified as "Table 1, Combined Evaluation Of Cash Flow For Virgin and Pre-mined Gravels" (Table 1). Further, contestees filed a motion under 43 C.F.R. § 4.415 requesting a reopening of the hearing to present evidence on issues of fact, indicating their intent to submit to the Board the affidavits of miners who testified at the hearing as to current local market prices of equipment deemed by BLM to be necessary to mine the claim and, in addition, evidence from one of the miners as to the current selling price per yard of mining tailings to be used for road building and to defray the BLM estimate of tailing placement. Contestees also have filed an affidavit offering facts as to the prices paid in Josephine County, Oregon, for mine tailings and for certain used mining equipment to be used in mining the Garden Spot Association Claim. Contestant filed an objection to the receipt of the affidavit, along with a motion to strike the affidavit as additional evidence newly tendered on appeal.

The record established at a hearing in a mining contest is the sole basis for determining the validity of the claim. Any additional evidence tendered on appeal can be considered only to determine if a further hearing is warranted. United States v. Rice, 73 IBLA 128, 141 (1983); United States v. Mattox, 36 IBLA 17 (1978); United States v. Taylor, 25 IBLA 21 (1976). Generally to warrant a further hearing, an appellant must show a sufficient equitable basis for holding a further hearing. Appellants have made no showing which would justify a further hearing in this case in which two separate hearings have already been held. Hence, the request is denied.

three samples (HB-AA, HB-BB, and HB-E) of placer gold values found in the premined gravels. (Ex. H.) As noted above, no samples from these deposits were initially taken by the Government mineral examiner. Six additional joint samples of the premined gravels were taken in the summer of 1992. (Ex. 35.) As noted above, larger gold particles obtained in the joint sampling were analyzed and found to be 825 fine, whereas the finer gold obtained by amalgamation was found to be 903 fine. (Ex. 35 at 17, Attachment 2; Tr. 984.) Since the weight of gold in the joint sample results (unlike the earlier sample weights obtained by contestant and contestees) has already been adjusted for fineness, the joint sample weights are multiplied by $390/troy ounce to determine net refinery return while the weight of the earlier samples was adjusted to reflect the contained gold. Sample values for premined gravels are as follows:

Sample	Sample Volume	Gold in Ounces	Value Per LCY
HB-AA	1.00 LCY	.0092	$ 3.05
HB-BB	1.00 LCY	.0162	5.38
HB-E	0.50 LCY	.0120	8.53
92-4	2.44 LCY	.0077	1.23
92-5	2.44 LCY	.0508	8.12
92-6	2.44 LCY	.0804	12.85
92-7	2.33 LCY	.0170	2.85
92-8	2.44 LCY	.0287	4.58
92-9	1.22 LCY	.0089	2.83
		Average Value:	$5.49

(Ex. J at 9; Ex. 35 at 19-21.)

Thus, the average value of the nine samples is $5.49/LCY. This compares with a value of $5.15/LCY obtained by Waters when processing a 75 LCY bulk sample of the premined gravel (Tr. 460, 723; Ex. T) using a gold price of $400/troy ounce and a fineness factor of 900. If the value of the bulk sample is adjusted to reflect a net refinery return of $390/troy ounce of gold and an 850 fineness factor, as noted previously, the value of the bulk sample is $4.74/LCY.

Again the mining method most likely to support a discovery was the mining method proposed by the appellants. The method varies from that proposed for mining the virgin gravels only by reason of the lack of trees and overburden. The exposed gravel would be excavated, loaded into a truck with a wheel mounted loader, and transported to the washing facility on the claim. The production rate would be 5 LCY per hour. Following processing the washed gravels would be replaced in the mined out area. The operation would be run by the claimant and his wife without hiring additional help.

During reclamation it would be necessary to rent a dozer. The following costs discussed above in the section discussing mining virgin gravels are therefore applicable to the premined gravels:

Labor cost	4.69
Direct operating cost	1.25
Maintenance	.09
Reclamation	.14
Total	6.17

Arriving at a cost of production, we deem it unnecessary to make a per LCY estimate of other costs, such as startup and shutdown costs not related to reclamation, depreciation, unrecoverable capital costs, permitting costs, or the cost of other overhead items such as accounting. The premined gravels on the Garden Spot claim do not represent a discovery of valuable mineral on that claim.

As noted above, the issue of discovery on this claim also requires consideration of the streambed gravel deposit. Claimants' streambed dredge samples taken in April 1992 prior to the initial hearing were measured for volume in terms of the number of CY's of material dredged and processed. (Tr. 494-95; Ex. H.) Values returned were calculated to be $25.73/CY (Sample BG) and $13.78/CY (Sample GC) based on $400/troy ounce gold. Id. Bart Rector who used his dredge to take the samples testified that sample BG was estimated to be a 2-yard sample dredged in 2 hours and that sample GC was estimated to be a 1-yard sample dredged in 1.5 hours. (Tr. 495.)

At the time of the subsequent joint sampling, the parties agreed to measure the productivity of dredging on the basis of ounces of gold recovered per hour. (Tr. 797, 923.) This was clearly a more reasonable approach given the difficulty of accurately measuring the volume of material dredged from the underwater streambed. Three dredge samples were taken using Bart Rector's dredge at the joint sampling. The dredge was operated by Rector when taking the first sample (D-1) and by Capps when taking samples 92-2 and 92-3. (Ex. 35 at 1.) Results of dredge samples are set forth as follows:

Sample No.	Ounces of Gold at 850 Fine Recovered	Ounces of Gold Recovered	Dredging Time in Hours	Return at $390/Oz.	Rate of Return in $/Hr
D-1	.2847	.2420	3	$ 94.38	$31.46/hr
92-2	.0976	.0830	4	$ 32.37	$ 8.09/hr
BG	.1287	.1094	2	$ 42.66	$21.33/hr
GC	.0345	.0293	1.5	$ 11.42	$ 7.61/hr
	Rate of return		10.5	$180.80	$17.22/hr

Dredge sample Nos. D-1, BG, and GC were taken by Bart Rector. Sample Nos. 92-2 and 92-3 were taken by Capps. Witnesses for the claimants

objected to the use of Capps' results, claiming that Capps was not proficient in the use of the dredge. After examining the log of the operation (Ex. 34), the video tape taken at the time of sampling (Ex. U), and the result, we deem it appropriate to discard sample 92-3 ($9.41/hr).

Capps estimated that for every 6 hours of production in a one-person operation there are 2 hours of down time spent doing such tasks as maintaining equipment, cleaning the sluice box, panning, and sending concentrates to the refinery. (Tr. 992.) Reference to the log of dredging operations (Ex. 34) indicates this is a conservative estimate.

After examining the record we believe that it is not as difficult to operate a suction dredge as it is to operate heavy equipment. Similarly it takes more skill and physical ability than one would expect from one being paid minimum wage. A reasonable wage would be somewhere between the two. Therefore, we deem an average of the two ($9.38) to be appropriate. Adjusting this figure to reflect the time spent doing nonproductive activities, the applicable per hour dredging labor cost is $12.50. Adding the 25 percent for overhead allowance, discussed above, we deem $15.60 an hour to be a reasonable estimate for labor cost.

The principal supply used in suction dredging is gasoline. The cost of gasoline was somewhere between $1.20 per gallon (Tr. 1122) and $1.30 per gallon. (Ex. 35 at 6.) The estimated consumption rate is 0.8 gallons per hour of operation. Therefore, $1 per hour of dredging appears to be a reasonable estimate of the cost of fuel. Another major cost is the cost of a wet suit. In his cost analysis, Capps capitalized the cost of a wet suit. However, based on Rector's testimony that suction dredging wears out a wet suit relatively quickly, we deem it more accurate to assume that a wet suit will last a single season. Assuming that the operation will run for approximately 600 hours a year (90 day season, 6 day a week work week, and 8 hour day), the cost of a wet suit is about $0.30 per hour. We also deem it reasonable to charge an additional $0.30 an hour ($200/year) for hoses, riffles, and other items in the suction dredge which must be replaced periodically.

To operate a suction dredge in the State of Oregon, the miner must obtain a permit from the State and approval from the BLM. We anticipate that the cost of obtaining these permits, both in actual cost and the cost of labor applicable to the time necessary to do so will be no less than $200 a year. Rounding down we deem it appropriate to estimate this cost to be $0.30 per hour of dredge use.

Operating Cost Per Hour Summary

Labor	$15.60
Fuel	1.00
Supplies	.60
Permitting etc.	.30
Total	$17.50

With respect to the capital costs associated with dredging the streambed placer, we note that the mineral examiner estimated that the

cost of a 5-inch suction dredge was $1,875. (Ex. 35 at 6.) We will use $2,000 to include the additional tools (shovels, bars, etc.) described as being necessary for the operation of a suction dredge. A 3-year life was used for amortization purposes. Because we are addressing the cost of mining in terms of dollars per hour of dredging, we believe that it is more appropriate to amortize the cost over a period of 2,000 hours (3-2/3 mining seasons) and use $500 as a salvage value. This equates to $0.75 per hour.

When amortization of the suction dredge and other equipment is included, the estimated cost is significantly higher than the anticipated revenue. Accordingly, we must conclude that there is not sufficient quantity and quality of gold contained in the streambed gravels to allow a person of ordinary prudence to make a further expenditure of his labor and means in the development of those gravels with a reasonable prospect of success in developing a valuable mine. The streambed gravels do not support a discovery.

We note that the parties to this appeal have made many diverse arguments, some less germane than others, in support of their position on appeal. To the extent that other arguments raised by the parties have not been specifically addressed herein, they have been considered and rejected.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the decision appealed from is affirmed as modified.

_____
C. Randall Grant, Jr.
Administrative Judge

I concur:

_____
R.W. Mullen
Administrative Judge